

# Water

## Where does water come from?

Water has been on the planet before any plants or animals, it's thousands of millions of years old. Along with rocks it is the oldest thing on the planet. The same water that was formed all those years ago has been recycled many times over to give us the water we see on the earth today, this is known as **the water cycle**.

### FASCINATING FACTS

Scientists believe that as the earth was cooling more than 4000 million years, clouds of steam were given off, and as the surface of the planet cooled further the steam or water vapour condensed into liquid water on the earth's surface. This water formed the earth's rivers, seas, and oceans.

**It must have rained like never before!!**

## The Water Cycle

**1.** Heat from the sun causes some of the water in the oceans to evaporate into an invisible gas in the air, called water vapour.

**2.** As the air rises and cools, the water vapour condenses into tiny drops of water.

**3.** The drops of water form clouds. Winds blow the clouds over the land.

**4.** The water in the clouds falls back to the earth as rain, hail, or snow (precipitation). The water runs over the land and soaks into the soil.

**5.** As the rain falls streams are formed which flow into rivers, which in turn flow into the sea. The water cycle starts again.

We tap into the water cycle by abstracting water from rivers, storing it in reservoirs, cleaning it before and after use, and then returning it to the rivers and seas

### FASCINATING FACTS

The Earth is covered with more than 70 per cent of the water, an estimated 1,360 trillion litres in total.

# Water for Life

Water is essential, without it life on earth would be impossible. About two thirds of the human body is made up of water.

- brain 85 percent water
- muscles 77 per cent water
- bones 33 per cent water

We need to drink about 2 litres of water a day to stay healthy.

Plants need large quantities of water to grow, they draw it up through their roots from the soil.

We use water in different ways:

**In food** – an enormous amount is used to produce the food we eat. Grains fruit and vegetables are watered to help them grow and animals are watered to keep them healthy.

## FASCINATING FACTS

A human can only survive for a few days without water whereas a camel can survive for up to two weeks. However camels can drink more than 100 litres of water in one go. The water is stored in the fat in their humps which is converted back to water as they need it.

**In the home** – each person in Britain uses an average of 130 litres of water every day, that compared to our great grandparents who only used 18 litres, is an enormous increase in water consumption.

How much water do daily activities use?

Having a drink	1 litre
Washing face and hands	9 litres
Brushing teeth	1 litre
Taking a bath	90 litres
Taking a shower	27 litres
Flushing the toilet	9 litres
Washing machine	136/load
Dishwasher	50 litres
Garden sprinkler	9litres/minute

**In industry** – water is essential for most manufacturing processes. It is used for cooling, diluting or dissolving purposes and may also form part of the end product.

## COULD BE FASCINATING FACT

If the greenhouse effect causes the earth's temperature to rise by about 5oC, the water in the seas would expand and so could rise by five metres or more. This would flood many of the worlds low lying towns and cities.

Below are some examples of how much water is used to produce every day items:

A small car	450,000 litres
A tonne of paper	54,000 litres
A bag of cement	180 litres
A bicycle	130 litres
A woollen jumper	100 litres
A litre of petrol	70 litres
A pair of leather shoes	53 litres
A pint of beer	3 litres
A small bar of chocolate	1 litre
An A4 piece of paper	0.5 litres

## How to Save Water

Water is a precious resource, especially in dry weather. If we use it carefully there will be plenty to go around. Below are some tips to help you use water carefully.

### In the kitchen

- Only use the washing machine when you have a full load, this can save up to 130 litres of water

## FASCINATING FACTS

If every person in the North West saved one minute of water a day, by turning off a running tap, that would fill a major reservoir.

- If you're buying a new washing machine or dishwasher, check to see which ones use less water and are more energy efficient, they may be more expensive but could save you money in the long run.

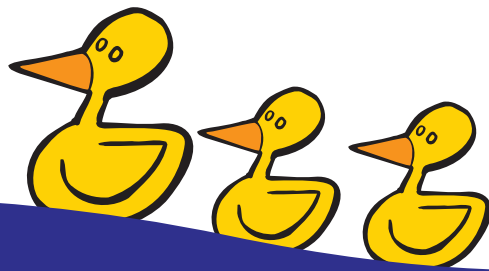
- Don't leave the tap running it can waste a litre of water every six or seven seconds
- Only fill the kettle as full as you need, this will save electricity too.
- Turn off taps fully
- Replace washers on dripping taps.
- Install a water meter to help monitor your consumption

### In the bathroom

- Turn off the tap when you're brushing your teeth, this could save 18 litres of water per brush.
- Take a shower instead of a bath. You get three showers for the price of one bath.
- A power shower uses the same amount of water as a bath.
- Put the plug in the basin when you wash your hands or face, this can save up to 10 litres of water.
- Toilets use 9 litres per flush, fit your cistern with a water saving device, they usually save a litre per flush.
- Don't throw things down the toilet, bag and bin them instead.
- Replace washers on dripping taps – a slow drip can waste a litre of water per day, a faster drip 3 – 4 litres and if it's hot water you're paying to heat it too.

### In the garden

- Use a watering can instead of a hose pipe, water early in the morning or late in the evening so that the water is not evaporated by the sun.
- Don't water the lawn, it does not encourage healthy grass, leave it to grow slightly longer instead.
- Choose plants that need less watering.
- Fit a rain butt to collect water from the roof, rain water is better for plants.
- Reuse kitchen water to water garden plants, the washing up liquid will act as a mild pesticide.



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